

AFSX Speed Responsive Switch

0.1–1000 RPM.

NEC/CEC — Rated for:
Class I, Division 1 and 2, Groups C, D
Class II, Division 1 and 2, Groups F, G
Class III
NEMA 7CD, 9FG

Applications

- For use in bulk material handling/processing systems to monitor speeds of:
 - Belt conveyors
 - Screw conveyors
 - Bucket elevators
 - Rotating machinery
- Used where alarm or computer interface capabilities are needed.
- For installation in:
 - Steel mills
 - Mining (ore and coal) operations
 - Grain handling
 - Chemical and plastic industries to protect elevators, feeders, and conveyors from speed related damage resulting from broken belts, overloads or belt slippage.
- For installation in mining and industrial areas where rugged control enclosures are needed for protection from falling ores, other heavy aggregates and from dripping water or hosedowns.
- Used in Class I and II areas where flammable vapors or highly combustible dusts are present.
- Designed to monitor material flow by sequencing the operation of multiple conveyors feeding a common bin or conveyor.
- Used as overspeed switches to detect motor overrun conditions. Pickup speed should be set above normal operating speeds. The output relay will energize if operating speed exceeds the set point.
- Used as underspeed switches to detect slipping belts, jammed conveyors or equipment and stalled motors: Pickup speed setting should be below normal operating speeds. The output relay will de-energize if operating speed falls below the set point.
- Used as zero speed switch: When speed approaches zero (0.1 RPM), the output relay will de-energize.

Features

- Signal range: three settings available (0.1-10 RPM; 1-100 RPM; 10-1000 RPM).
- Adjustable time delay (up to 45 seconds).
- Input power is applied to the speed responsive switch at all times. The switch then senses input shaft speed in either direction.
- When input shaft speed exceeds the pickup set point, the output relay is energized.
- If shaft speed falls below 80-85% of the pickup speed the relay will de-energize.
- Clockwise or counterclockwise rotation.
- Senses speed changes as slight as 1%.
- Operating temperatures are -45 °C to +65 °C (-49 °F to +149 °F).
- 3/4" NPT standard, two conduit openings.
- Radial load is 57 kilogram (125 pound) maximum at center of the key.
- Axial thrust load is 45 kilogram (100 pound) maximum.
- Driving torque required is one inch-pound maximum.
- Flexible coupling accessory allows up to 7.5° misalignment, high shock resistance and eliminates transmission of thrust loads.



Front

Back

Electrical Specifications

- Input voltage is 105-135 Vac, 50-60 Hz
- Output is a double pole, double throw relay rated 5 Amp resistive at 120 Vac, 5 Amp at 240 Vac, 5 Amp at 30 Vdc.
- Repeatability is +/-2% maximum at constant voltage and temperature.
- Power consumption is 3 watts maximum.
- Pulse sensor (solid state opto-electric infrared device) operating life is 25 years if constant operation is at maximum speed.
- Pickup speed is adjustable by set point potentiometer.
- Drop-out RPM will be 10-15% lower than pickup speed to account for normal fluctuations in actual operating RPM.
- If a signal is required within 1-15% of the normal operating speed, contact your local representative for presetting.

Standard Materials

- Housing: cast copperfree (4/10 of 1% max.) aluminum
- Shaft: stainless steel, 5/8" diameter
- #11 Woodruff key and hardware: stainless steel
- Flexible coupling: cast zinc
- Sleeve: neoprene with textile reinforcement

Standard Finishes

- Standard enclosure: shot peened

Optional Materials

- Housing: corrosion resistant epoxy powder coat

Options

- Epoxy powder coated switches, add suffix **-G1**.
- Mounting Bracket: **AFSA1**, **AFSB1**, **AFSB2**, **AFSB3**.
- Coupling guard: **AFSG1**.

CONTROLS: NEC/CEC EXPLOSIONPROOF CONVEYOR SWITCHES

AFSX Speed Responsive Switch

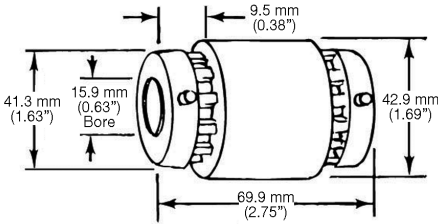
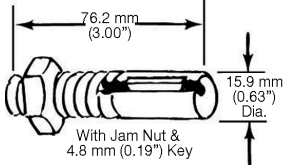
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Catalog Number	
	AFSX300

Optional Accessories

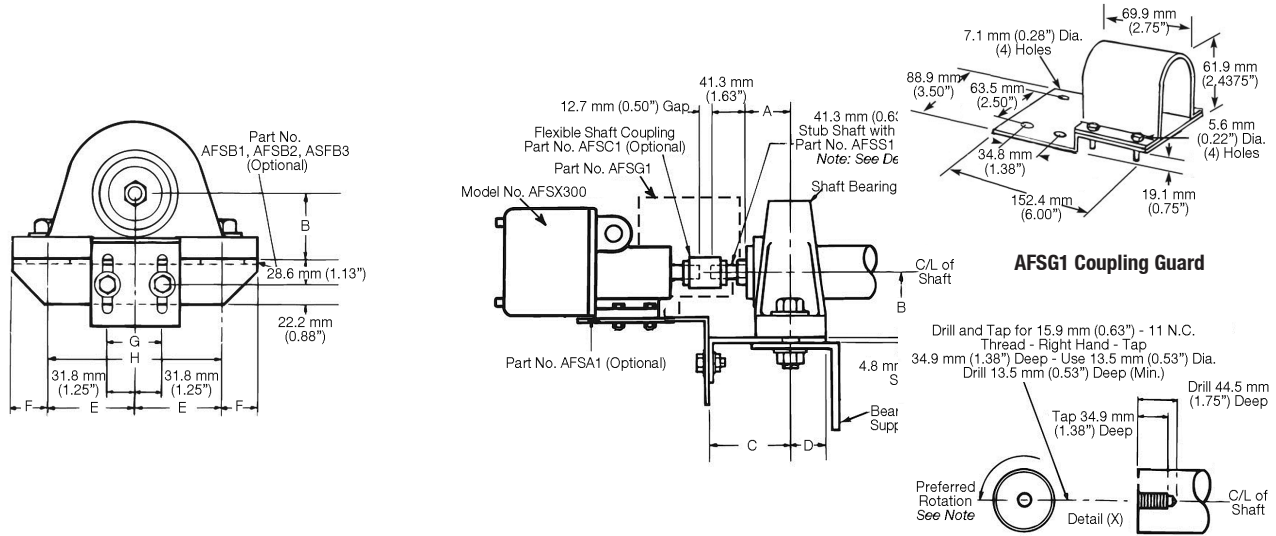
Description		Catalog Number
	Flexible Coupling This coupling will operate at up to a 7-1/2° axial misalignment with no significant life reduction. This unit features high shock resistance and eliminates transmission of lateral thrust from one shaft to the other (no end thrust). Sleeve: With axially molded internal teeth. Made of neoprene with textile reinforcement. Two end fittings grooved to mate with sleeve teeth. One fitting attached to each shaft.	AFSC1
	Stub Shaft 76.2 mm (3") threaded one end, keyed other end. With jam nut and 3/16" key.	AFSS1

AFSX Speed Responsive Switch Mounting

0.1–1000 RPM.

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Dimensions in Millimeters (Inches) and Suggested Mounting Arrangement



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Bearing Bracket and Shim Plate Part #	Shaft Diameter	Dimensions in Millimeters (Inches)						Width x Length	
		A	B	C	D	E	F	G	H
AFSB1	36.6 (1.44)	31.8 - 50.8 (1.25 - 2.00)	47.8 - 54.1 (1.88 - 2.13)	79.5 (3.13)	28.7 (1.13)	68.3 (2.69)	46.0 (1.81)	49.2 x 25.4 (0.194 x 1.00)	14.3 x 33.3 (0.56 x 1.31)
AFSB2	49.3 - 62.0 (1.94 - 2.44)	38.1 - 65.0 (1.50 - 2.56)	57.2 - 76.2 (2.25 - 3.00)	95.3 (3.75)	41.4 (1.63)	93.7 (3.69)	49.3 (1.94)	49.2 x 25.4 (0.194 x 1.00)	20.6 x 50.8 (0.81 x 2.00)
AFSB3	74.7 - 100.1 (2.94 - 3.94)	76.2 - 95.3 (3.00 - 3.75)	79.5 - 104.9 (3.13 - 4.13)	114.3 (4.50)	55.6 (2.19)	122.2 (4.81)	68.3 (2.69)	49.2 x 25.4 (0.194 x 1.00)	27.0 x 65.1 (1.06 x 2.56)

Mounting Dimensions in Millimeters (inches)

